JACOBS (CHAS.)

The Operative Technique of Vaginal Hysterectomy.

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THE OPERATIVE TECHNIQUE OF VAGINAL HYSTERECTOMY.*

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At the last meeting of the American Gynæcological Society in Baltimore, I presented a large class of cases whose indications are distinctly for vaginal hysterectomy.† I desire in this paper to describe in detail the manual technique of this operation, and we will consider all those modifications also which are properly applied to that form of the operation which may be called "typical"—modifications which have extended very greatly the field of its indications.

THE TYPICAL OPERATION.

A. *Uterus of Normal Size, Non-adherent or Slightly Adherent.*

Instruments:—A perineal retractor, two lateral retractors, a pair of strong scissors, two traction forceps, six long forcipressure forceps, a thermocautery.

The perineal retractor being in position upon the fourchette, the operator seizes both lips of the cervix in a traction forceps and drags down the uterus as far as possible; then, holding the forceps vertically in his left hand, he draws the neck toward the pubis, in order to place the posterior *cul-de-sac* well upon the stretch; the two lateral retractors assist in exposing this region. With the thermocautery in his right hand, he makes a semicircular incision upon the posterior surface of the neck, after which the assistant on his left takes the traction

* Expressly written for this JOURNAL and translated literally from the original French.

† Indications for Total Castration by the Vagina. *American Gynæcological and Obstetrical Journal*, June, 1895.

forceps in order to free the left hand of the operator. The latter then catches, with a long dissection forceps, the lower edge of the incision made by the thermocautery and continues the dissection into the deep tissues, still by means of the cautery, which he holds as close to the cervix as possible. The opening up of the posterior peritoneal *cul-de-sac* is rapidly done and is greatly assisted by the use of the fingers.

The traction forceps are now drawn vertically toward the fourchette and a semicircular incision, the ends of which should unite with those of the first incision, is made upon the anterior surface of the neck with the thermocautery. The dissection of the cellular tissue is accomplished by means of the finger, which should separate the bladder and the ureters by a "to-and-fro" movement; the lower vaginal portion of the cervix also being completely dissected from its attachment to the cellular tissue by the same means. The peritonæum which appears at the bottom of the wound is caught up by the operator and incised with scissors, the opening being further enlarged by the fingers.

The index finger is now introduced through the open pouch of Douglas and examines the body of the uterus and the condition of the appendages. The separation of these organs from their adhesions to neighboring tissues is aided by the steady traction exerted by the other hand of the operator, which holds the forceps upon the uterine neck. The thumb and index finger of the left hand then grasp the entire thickness of the tissues which unite the neck laterally with the neighboring tissues and which always includes one or two vaginal arterioles. These tissues are firmly compressed by forcipressure forceps with a short bite, placed along each side of the cervix, and are then divided. After this proceeding, the uterus descends considerably.

In order to extract this organ, it only remains to draw strongly upon the traction forceps, a finger being introduced at the same time into the anterior *cul-de-sac* to give the body of the uterus a swinging motion in an outward direction; the appendages follow. A long pair of forceps are placed, on the outer side of the appendages, upon the broad ligament; if the uterus be large and the vascular system greatly developed, I do not hesitate to use two forceps, the lower one assuring hæmostasis of the uterine and the upper of the ovarian artery. The incision is made on the inner side of these forceps and the uterus is removed entire with the appendages. The patient has not lost five grammes of blood. The "typical" operation, performed by this method, takes from two to five minutes.

B. *Large, Adherent Uterus, without Attachments.*

The beginning of the operation is exactly similar to the preceding —that is to say, we detach the cervix from its insertion in the vagina by means of the thermocautery, we open up the anterior and posterior *culs-de-sacs* and place laterally on the neck two long forceps, which enable us to dissect it out without hæmorrhage.

We now divide the anterior lip of the cervix in the median line, and traction forceps are placed to the right and left of this commissure. The left forceps is handed to an assistant, who draws forcibly upon it in a downward direction, while the operator holds the right forceps in his left hand and the scissors in his right. The cervix is divided at the median line as high up as possible and from before backward. Two traction forceps are fastened upon the edges of the wound, one on the right and the other on the left, one branch of each being in the uterine cavity and the other fixed upon the anterior surface of the cervix or uterus. Traction is maintained by continuous action upon these forceps. Those adhesions holding the uterus in the pelvis, which are most accessible, are now divided and the median incision is continued. As a deeper portion of the anterior surface of the uterus appears, it is divided and two extra traction forceps are applied as high as possible upon the lips of the incision. When the fundus is reached the last adhesions are broken up by the finger and a swinging motion outward is given to the uterine body, in which manœuvre a finger placed behind it is of marked assistance.

When the uterus is delivered, the appendages come at once within reach and are seized and drawn down as far as possible. One or two forcipressure forceps are then applied to the broad ligament outside the annexa and control the uterine and ovarian arteries. Here also the uterus is removed entire with its appendages.

It often happens that, during the rocking motion given to the uterine body, the cervix, if large and somewhat elongated, tends to fall back into the cavity of the vagina. By drawing upon the first two traction forceps, which should always be left in place, the whole organ can easily be drawn down.

It is an essential point in placing the forcipressure forceps always to protect the bite of these instruments upon the index finger passed in front and the thumb passed behind the ligament, that we may be certain not to injure any organ, whether intestine or omentum. In the same way section with the scissors should always be carried out with the greatest care.

The cases of uterine prolapse which occur in this category often present great difficulties on account of the thickness of the vaginal mucosa, the great vascularity, the elongation of the cervix and the formless condition of the portio vaginalis. Here also one must be very careful not to wound either the rectum or the bladder. I have always found in cases of prolapse that the operation is longer and more difficult than in other cases.

C. *Pelvic Suppuration; Pelvi-peritonitis; Old Adhesions.*

If the uterus is voluminous with thick friable walls and held down in the pelvis by numerous adhesions, and if the pelvic cavity is filled by large, attached tumors adherent to all the neighboring organs, the following is the operative technique :

Traction forceps having been placed upon the cervix, its condition of fixity in the pelvis is determined by a few vigorous pulls. The inferior retractor is now inserted, and the neck is raised by holding the traction forceps against the pubis with the left hand. We then make a semicircular incision upon the posterior surface of the neck with the thermocautery.

The assistant holds the traction forceps without changing their position, and the dissection of the posterior *cul-de-sac* is continued by the thermocautery, which is kept as near as possible to the uterine tissue. While in cases of movable uterus the peritoneal *cul-de-sac* is easily opened by the thermocautery, in these cases we can rarely succeed in this way. Raising the posterior retractor, we continue the dissection by means of the finger until the peritonæum is reached. The finger, by a lateral to-and-fro movement, breaks up all the adhesions, opens the peritoneal cavity and frees the posterior surface of the uterus. It often happens at this time that a gush of serous, sero-sanguineous, or purulent fluid occurs, the finger having opened adhesion sacs behind the uterus; though inflammatory sacs of the annexa are rarely opened in this way. Considerable practice in these operations imparts to the finger such tactile sensibility that these inflammatory pockets of the annexa can easily be distinguished from those which are peri-uterine or from intestinal, omental or other adhesions. We thus free the whole posterior surface of the uterus and are enabled to explore the whole of the lower pelvis. The result of this exploration will show us what our course should be.

If the condition of the patient be very serious and her weakness will not permit a long operation, I am satisfied to look for the encysted purulent pockets, to open them with finger or forceps and

evacuate their contents. Moreover, this operation is without danger on account of the numerous adhesions which close the lower pelvis above the uterus. The radical operation may be taken up later when the condition of the patient permits.

If the exploration indicates immediate operation, we continue as follows: The neck is drawn toward the fourchette and the vaginal mucous membrane of the anterior *cul-de-sac* is incised by the thermo-cautery. The incision is opened out deeply, the bladder is freed by the finger and the peritonæum is opened either by this means or by the scissors. This anterior dissection is always easier than that of the posterior surface where the adhesions are usually found. Two shorter forceps are placed upon the lower part of the ligament, the cervix is completely separated by the scissors and is then incised along the anterior median line. This incision is continued upon the anterior surface of the uterus as far as the adhesions will permit. Two traction forceps are placed on each lip of the incision, and the operator draws them strongly toward him. The incision is prolonged upward upon the part which presents and is thus continued to the fundus of the organ, which is often adherent to the intestine or omentum. The dissection of the fundus of the uterus may be made in full view. I have often seen, while detaching intestinal adhesions with the thermo-cautery, the uterus at the vulva—the cervix at the fourchette and the fundus at the superior commissure. The last adhesions having been separated, the uterus is held by traction forceps placed at the middle of the upper posterior surface; this allows the removal of the traction forceps previously attached.

If examination of the annexa shows them to be very large, I am accustomed to place two long forceps upon the sides of the uterus and to remove the latter, in order to give more room for the ablation of the annexa. If, however, these are neither very adherent nor large, they may be removed with the uterus *en masse*, as in the preceding cases.

All adhesions about the tubes and ovaries should be broken up carefully by the index finger and these organs drawn gradually down to the vulva. If the tubal and ovarian pockets are too large they may be punctured and their extraction thus rendered easier. When we have succeeded in bringing the tubes and ovaries outside, it will be sufficient to place one or two forcipressure forceps with a short bite upon the broad ligament and to cut them off.

A douche with sterilized water is often necessary after ablation, especially if the escape of pus has been abundant. If the tumors or annexial pockets are very large we should begin by puncturing them.

I am accustomed to evacuate the contents of these pockets by the bistoury or scissors at the most accessible point. Generally it is easy, after a partial or complete evacuation, or even during it, to draw the pockets down to the vulva either by means of the traction forceps attached to their walls or by using simply the fingers to separate adhesions and drag them outside. It is very rarely that I am obliged to leave portions of these pockets in the pelvis, and I have often been able to demonstrate the facility which the vaginal route offers for attacking all adhesions, whether intestinal or omental. I have many times been able to draw the walls of these pockets and the intestines which adhere to them down to the vulva and to dissect off these adhesions by the thermocautery under the eyes of the spectators. When the walls of a tubal pocket are thick and cheesy, as is usually the case in enormous tumors, we should never hesitate to drag them down outside by means of traction forceps, one blade of the forceps being introduced into the pocket.

When the adhesions present a very large surface, it is possible, though with difficulty, to separate them by partial morcellation of the walls. When the firmness of the intestinal adhesions causes danger of perforation to the latter by too strong traction, it is better to leave the upper part of the pockets in the pelvis. They will contract and disappear rapidly, owing to the drainage which will be established after the operation.

Uterine Cancer.

Cancer of the Cervix.

After having freed the cervix from all friable tissue by the sharp curette I increase the traction forceps over its entire circumference; that is to say, in order to draw down the uterus I use four, six, eight, or ten traction forceps—a method which prevents any of the forceps from slipping and tearing the tissues.

With the thermocautery I then incise widely the vaginal mucosa all around the neck, for a good centimetre in length of the diseased tissues, as far as the cellular tissue. The freeing of the bladder and of the rectum is accomplished by the finger. If, unfortunately, the bladder be torn at the time of operation, the wound should be closed immediately with interrupted sutures. I open the anterior and posterior *culs-de-sac* with scissors, the finger being used to protect the broad ligament. After this, the openings in the peritonæum are enlarged by the fingers and the uterus is drawn down to the vulva by traction forceps. Two small forceps are then placed on each side

of the lower vaginal portion of the cervix. Great care must be taken before closing the forceps that the integrity of the tissues is assured; the cervix is now entirely freed by the scissors. I am accustomed next to give a swinging motion to the uterine body, anteriorly or posteriorly, according to the greater facility given by its position and size. Two forceps placed outside the annexa, which follow the extraction of the uterus, assist very greatly in rapid total extirpation and, in a measure, obviate the fear of infecting the pelvic peritonæum.

In *commencing cancer of the body*, the method is the same. If it has lasted several months, the uterus has increased in size and become very friable, and extirpation may be *very difficult*. After opening the peritoneal *culs-de-sac* and completely freeing the cervix up to the level of the internal os, I perform median section, either anteriorly or posteriorly, according to the case; the danger to be avoided is the *slipping* of the traction forceps. This may easily be obviated by employing very small forceps and many of them, since with the cervix the multiplication of points of traction assists the operator very greatly and is an assurance that he will not see his instruments suddenly slip out of hand and the uterus rise in the pelvis.

By means of this method pursued carefully as far as the fundus (which should always be protected by the finger), we reach a point when the uterus may be drawn down to the vagina and the operation completed by forcipressure of the broad ligament.

Uterine Fibroma.

The operative methods differ according to the case. The separation of the cervix and the opening of the peritoneal *cul-de-sac* is carried out according to the rules which I have already given. If either *cul-de-sac*, on account of its retracted position, can not easily be reached, we should not waste too much time with it but open it during the course of the operation. The cervix is drawn down and divided at the anterior median line. Two traction forceps are immediately placed at the upper ends of the incision, and by their means a considerable portion of the uterus is dragged down into the pelvic strait and the traction continued.

During this traction either by the operator or his assistants, all the retractors are inserted and the operator proceeds with the index finger to free the bladder as high as possible. The anterior retractor is replaced, which draws the bladder aside and also frees a greater or less extent of surface on the anterior uterine wall.

The median incision is prolonged either by continuing it in its original course when the fibroma is not too large, or by bifurcating it in a Y shape or according to this figure Ψ. Two traction forceps are now placed lengthwise on the tissues thus separated and are drawn down as much as possible. If the freedom of motion thus obtained is not marked, all that portion of the anterior surface of the uterus comprised within the branches of the V should be immediately cut with scissors or with a bistoury. If two traction forceps be placed on the upper portion, a considerable freedom of motion forward will be obtained, and always in direct relation to the size of the V or of the Ψ. If the peritoneal *cul-de-sac* now comes into view, I hasten to open it widely. The anterior retractor will draw aside completely the bladder and the ureters and thus obviate any further danger of wounding them.

At this point of the operation fibroid nodules of different sizes are often seen cropping out at various places from the uterine muscle. I immediately enlarge the opening at the site of these tumors, seize them with the traction forceps and extirpate them either by tortion or by morcellation with the scissors or bistoury. When the principal tumor projects into the uterine cavity it also is excised either *en bloc* or by morcellation if its size be too great. I was able to demonstrate this last June at the Rush Medical College in Chicago, extirpating by this method a large interstitial fibroma without forcipressure and without hæmorrhage. A finger carried into the uterine cavity and into the spaces left by the fibromata enables us to ascertain if any portions of them remain; in which case we should find and extirpate them, following the steps already described. Little by little, with the enucleation of the interstitial fibromata, the traction exerted upon the two forceps which are attached to the extremities of the median incision will suffice to work the uterus outside. Often it is merely necessary at this point to extend somewhat this first incision, when we will see the whole uterine mass suddenly slip down to the vulva. The posterior peritoneal *cul-de-sac* may now be easily opened.

With the uterus at the vulva, total extirpation is completed by placing two long forceps with a short bite upon the broad ligament on each side.

If the uterus be surrounded by subperitoneal fibroid nodules, it frequently happens that their extirpation must precede that of the uterus, because of the latter's exit through the small vagino-perineal opening; if too large, morcellation may be practiced, since of course there is no longer any fear of hæmorrhage.

The essential point in this morcellation of the fibromata is to begin this or to attack the tumors without waiting for the methodic extirpation of the uterus. Moreover, this operation requires a certain amount of experience, although this is quickly acquired. While the uterus, which is studded with fibrous nodules, is being worked down, the sense of touch will enable the surgeon to know which of these it is which offers resistance to extraction—that is the one he must attack. If the nodules are situated in the posterior wall, he will look for them after cutting through the uterine mucosa. When the principal fibroma is situated in the lower part of the posterior wall and has pushed the cervix very high up, why waste time in attempting to open the anterior *cul-de-sac* which is absolutely inaccessible? The posterior vaginal *cul-de-sac* should be opened, where the fibroma may be directly attacked with ease if the tumor be situated low down; if it be high it may be necessary, in order to reach it, to perform a median section or one in the shape of a V upon the posterior wall. When access to the anterior *cul-de-sac* is possible, the *typical* operation should be undertaken. When the fibroma has developed in the broad ligament we should perform morcellation before attempting hysterectomy.

Evidently I can not give here, in detail, the course to be pursued in each case. Two fibromata which are exactly the same are rarely met with, and the operation must thus be varied in detail according to the case. Latitude must be given to the operator, who alone can judge whether this or that method is applicable or favorable to the speedy termination of the operation.

When absolutely necessary, fibrous tumors may, with the exercise of patience, be operated upon which extend to the umbilicus and even beyond, but I fear that the length of the operation and the many manipulations necessary are scarcely favorable to the patient. I have seen French surgeons attempt operations of this sort lasting from two to three hours! I have long given up this practice. I do not operate upon fibromata through the vagina if they extend beyond the umbilicus. When they reach that point and beyond it I perform total *abdominal* extirpation.

Such, briefly, is the operative technique of vaginal hysterectomy as I perform it to-day and as I have had the honor of demonstrating it during my visit to America. I hope at a future time to return to this very practical subject, in this JOURNAL, and to describe the operative sequelæ and the complications consequent upon total vaginal castration.